

Before the
FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of)
)
IP-Enabled Services) W.C. Docket No. 04-36

Nortel Networks

**Appendix 1: Next Generation Broadband Voice Services - What Broadband
Consumers Want and Are Willing to Pay For!**

May 28, 2004

Introduction

Nortel Networks worked with Pollara, Inc., a leading market research firm, to execute a research exercise focused on understanding the value of next generation broadband voice services to consumers. The results of this research initiative provide the information on the value, prices and expected penetrations of these services into the marketplace.

In this white paper we will provide a high level overview of the findings – and will highlight some of the most interesting learnings from this study.

Next Generation Services Consumer Research Initiative

In order to answer the question, “What services do consumers and enterprises value and are willing to pay for?”, a comprehensive research process was developed to first obtain qualitative information, and then to use this qualitative information to design quantitative surveys including conjoint analysis to determine relative feature values. This qualitative research consisted of both dial-up and broadband internet user focus groups in Toronto, Canada and Los Angeles, USA.

The qualitative research was followed by a quantitative survey of over 600 US broadband consumers. The results of the quantitative survey are statistically representative of all US broadband consumers.

Based on the results of the qualitative research, the quantitative survey was segmented between residential broadband consumers and broadband home office consumers. The home office segment was qualified with the question “Do you operate a full or part-time business out of your home?” Discrete Choice Modeling, a form of conjoint analysis, was included in the quantitative study to determine relative feature values.

This research had two primary goals– the first was to determine today’s consumer communication needs. We wanted to understand what communications problems and needs consumers currently have in order to identify potential solutions for these problems. Secondly, we wanted to put a set of next generation services in front of consumers to determine the value of these services in the marketplace. We based this set of next generation services on the services available today from the Nortel Networks Multimedia Communication Server (MCS) 5200.

Broadband Consumer Snapshot

A key outcome of the survey was the ability to paint a picture of the current “broadband consumer lifestyle”.

The Broadband Consumer

Broadband Users are highly educated and have high technology usage ...

- **68% have multiple PCs in the home**
- **72% have a contacts list on PC**
- **Many have friends or family outside of local calling area that they phone and instant message frequently**
- **74% are frequently or mostly away from home**

Source: Nortel Networks Primary Market Research

One of the first tasks of the research was to build a technology profile of the typical broadband consumer. It was our belief that a technology profile would allow us to understand the relationship that consumers have with technology. Moreover, we anticipated that technology usage would have an impact on their future likelihood of purchasing new SIP (Session Initiation Protocol)-based services.

Following are some interesting findings from our questions focusing on technology usage:

- Most broadband users have multiple PC's in the home, and most of them are using their PC to help manage contacts
- Broadband users, despite the amount of time they use the Internet, are often away from home. They lead busy lives, use instant messaging frequently, and frequently make telephone calls to friends and family outside of their local calling area.

These findings point to a strong latent need for help in managing their communications with others. The research results suggest that end users could immensely improve their communications through the use of communication management tools, collaboration tools for school or home office use, video calling, and combined wireline and wireless services.

**Broadband User
Communication Needs**

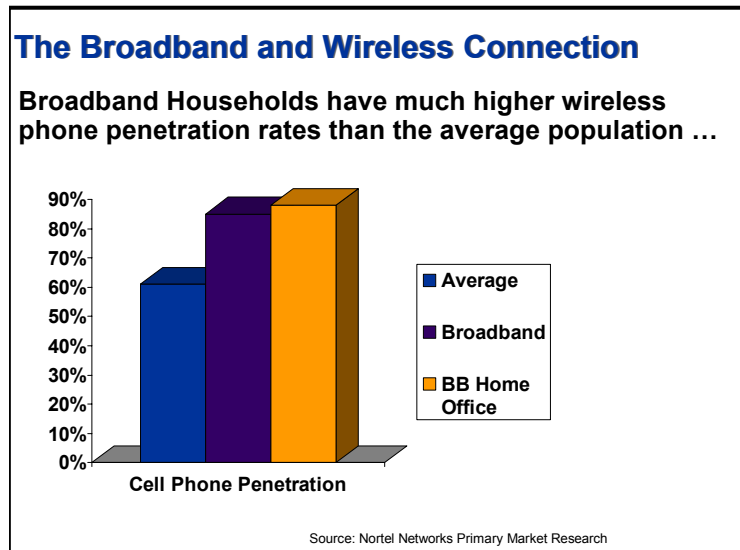
- Communication Management Tools
- Collaboration Tools for Schoolwork / Home Office
- Video Calling
- Combined Wireline and Wireless Services

Source: Nortel Networks Primary Market Research

The Broadband and Wireless Connection

The combined wireline/wireless service opportunity is very interesting. The research indicates that broadband users are much more likely to have wireless phones than the mass population, and those who have home offices are even more likely to have wireless phones. Moreover, not only do they personally have wireless phones, but other members

of their household are also likely to have wireless phones. All in all, the penetration rate of wireless phones in the target broadband population is approaching 90%!



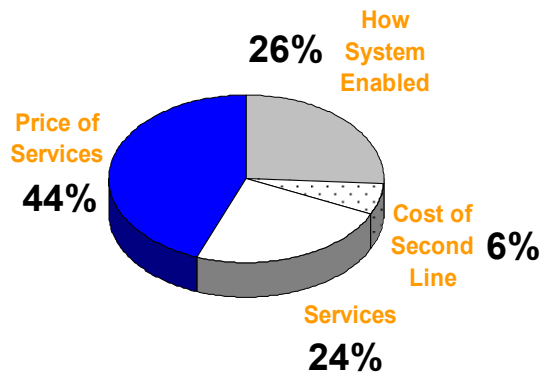
Even though the proliferation of wireless phones has increased convenience and access to telecommunications services, our research also showed that this proliferation has also led to the need for technologies to help manage these services. We'll discuss this more in the following sections.

The Broadband Communications Purchase Decision

As stated previously, a methodology called Discrete Choice Modeling was used in the quantitative research. This is the most accurate approach to projecting consumer demand available in the marketing research industry today. This methodology allows us to do is measure which combinations of services have the greatest impact on the decision to purchase the product being evaluated. This research focused on four major feature-components and evaluated which ones have the greatest impact on the decision to purchase a next-generation communication service.

The Purchasing Decision

Services and Price of Services Make Up the Majority of the Purchase Decision Factors when evaluating a Multimedia Communications offering



Source: Nortel Networks Primary Market Research

This service was described to research participants as follows: First, we explained that the service could be provided using their existing broadband Internet service and existing telephone lines, or it could be provided through a second telephone line that they would be required to purchase to enable these services. The participants were told that this phone line would be provided using their broadband connection.

Therefore, in reviewing the pie chart in "The Purchasing Decision" graphic, it is apparent that how the system is enabled accounts for 26% of the decision to purchase this type of service. The cost of the second line, if required, only accounts for 6% of the decision to purchase the service. This research indicates that the price of the services available through this service have the greatest impact on the decision to purchase the service, accounting for 44% of the decision to purchase. Finally, the services themselves account for 24% of the decision to purchase. This research also indicates that services are especially important to higher income households and to people with active lifestyles.

Consumer Services Ranking

We examined 12 services in detail to determine which ones had the greatest impact on demand.

Services Rankings

Service	Broadband Consumer	Broadband Home Office	
Click to Dial /Call Logging	1	3	} Large Value Delta
Caller ID / Call Waiting ID	2	6	
Video Calling	3	1	
One Voice Mailbox	4	4	
Call Screening and Routing	5	2	
Multi-party Conferencing	6	5	
Voice Mail PC Interface	7	8	
Application Sharing	8	7	
Voice Activation	9	10	<i>Based on feature lift on demand from conjoint analysis research</i>
Dynamic Call Handling	10	9	
File Transfer	11	11	
Web Push	12	12	

Communications Management

Multimedia and Collaboration

Source: Nortel Networks Primary Market Research

Looking at the “Services Rankings” table, the first column illustrating the rank-ordered services for the broadband segment shows that Click-to-Dial, Caller ID and Video Calling occupy the top three spots in terms of their impact on demand. It’s interesting that Click-to-Dial and Caller ID rank high because this supports the qualitative research finding that consumers need more control of their telecommunications -- and when presented with an offering that includes communications management services, these services have a significant impact on the purchase decision. One Voice Mailbox (for the wireless phone and home phone) occupies the fourth spot, and Call Screening and Routing takes the fifth spot – again supporting the need to for a tool to help control communications.

Comparatively, the multimedia and collaboration services rank lower in terms of their impact on demand for this type of product, with services like Instant File Transfer, Application Sharing, and Web Push having a lower impact on demand. Interestingly, the one exception is the application of Video Calling -- especially in the home office market

where it ranks #1 – a service that has typically been the domain of large businesses in the past is now affordable for mass market use!

The Personal Communications Management Opportunity

The market research identified those services that help consumers to better control their communications as the ones that have the highest customer value. At least three-fourths of broadband consumers feel that they do not have sufficient control of their communications today. In addition, one-third of broadband consumers indicate that they dislike having to dial long telephone numbers – and this number will only increase as North American dialing plans continue to evolve.

“One-Click” services are highly valued – whether it is Click-to-Dial, Voice Mail PC Interface, or Multi-Party Conferencing. And Call Logging is also highly valued. Two reasons for this appeared in our research: First, even consumers with wireless phones are concerned that they may miss important calls. Second, Call Logging provides consumers with more control over their communications, similar to how Caller ID has provided this in the past. We found that consumers also highly value a service that allows them to choose, in real time, whether to take a call, reject it, or send it to voice mail. We called this service “Incoming Call Options” in the research.

The Unified Communications Opportunity

Earlier in this paper we stated that broadband consumers have a much higher wireless phone penetration than the average consumer. It was interesting to discover from the research that the incidence of missing important calls due to being away from home is actually twice as high for wireless phone owners than for non-wireless phone owners. It seems that as the number of communication devices increases, so does the need for a solution to control all of these devices as one system.

Personal Agent is a service that allows a subscriber to screen calls and also to users to define rules to redirect incoming calls (based on call attributes such as caller ID, time of day, etc.) from a single directory number (or SIP address) to their most convenient communications device. Personal Agent also allows for one voice mailbox to be used for all of their communication devices. According to our research, there is high interest in this “personal agent” service among broadband consumers.

Another interesting finding is the correlation of the interest of specific services to specific demographics. It appears that consumers with children have high interest in call screening and routing, while one voice mailbox has most appeal to consumers without children. This is important for service providers to consider when positioning these services into the market.

In order to understand the potential of a Personal Agent service to induce (or reduce) wireless subscription churn, wireless phone owners were asked specifically if they would switch wireless phone providers to obtain a combined voice mailbox. The answer should serve as a wake-up call to wireless providers -- over one-third said that they probably or definitely would switch providers to obtain this service!

The Multimedia and Collaboration Opportunity

So we've established that there is high interest in communications management and personal agent services. What about multimedia and collaboration services?

The research indicates that broadband consumers are *highly* collaborative – especially broadband home office users. Over half of broadband home office users must share documents with others, and 64% say that they use the telephone to work with others on projects. This likely explains the high interest in a SIP-based application sharing service, as well as a multi-party conferencing service.

In addition, over 1/3 of broadband consumers discuss web site content with others on a regular basis, which could explain the value placed on web push and co-browsing services. Finally, all broadband users are also interested in a broadband file transfer service – (one which would let them instantly send large files to collaborators – even files too large to e-mail). They are interested in this service because over half of them download large files from the internet on a regular basis.

While broadband home office users plan to use collaboration services to increase productivity in working with customers, suppliers, and co-workers, broadband consumer parents would like for their children to have these services to work on school projects with friends.

The bottom line is that demand for multimedia and collaboration services is in place and broadband consumers are ready to consume!

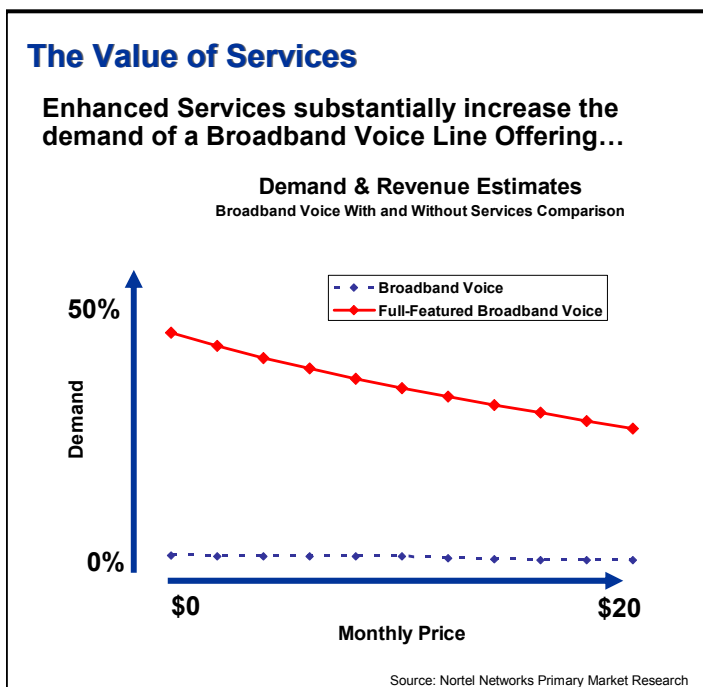
The PC Video Calling Opportunity

One of the more interesting services included in the research is PC video calling. This is one of the highest valued services among broadband consumers and is actually the highest valued service among broadband home office users. The research indicates that broadband home office users are willing to pay as much as \$4 US more than the non-home office broadband consumer for this service. Service providers should consider this significant price delta when positioning this service into the market.

The research points to an opportunity for PC Video Calling to help geographically distributed families and families with young children to communicate more effectively. As many as 15% of broadband households have frequent contact with international friends and family, which is a market opportunity that service providers may want to explore. Also, there is a high correlation of interest in this service with having children of less than 12 years of age in the home.

Services Demand and Pricing

Perhaps the most interesting finding of all is that a broadband phone service, without any added next generation services, has little value to broadband consumers.



As you can see from the "Broadband Voice" line of "The Value of Services" illustration, less than 5% of consumers say they would pay for a broadband phone service that does not include any additional next generation services. This leads us to believe that existing offerings in the marketplace without next generation communication management and multimedia services are selling only on the value proposition of the services they are bundled with -- such as a long distance discount package .

However, as you can also see by the "Full-featured Broadband Voice" line in the graph, a broadband communication solution that does include the services that we have discussed does not only have value to consumers on its own merit, but it has *substantial* value to consumers. While the majority of this value delta is attributed to the communication management services we discussed, about 10% of the lift is due to multimedia and collaboration services.

Summary of Broadband Consumer Communications Opportunity

To summarize the conclusions of this research, the market value of communication services is very strong, and multimedia and collaboration services have significant value to broadband consumers. .